

**AMENDMENT TO THE CLAIMS:**

This listing of claims will replace all prior versions, and listings, of claims in the application:

**Listing of Claims:**

1. (previously amended) In a network device configured by a configuration command, a method for automatically re-constructing said configuration command based on data stored in a configuration database during parsing and processing of the configuration command by the network device, the method comprising the steps of:
  - 5 creating and storing a linear command regeneration template that includes at least one linear node template in a memory, each linear node template corresponding to a command element in said configuration command; and
  - 8 regenerating said configuration command based on said linear command regeneration template and based on data from the configuration database.
- 1 2. (previously amended) The method of Claim 1 wherein the step of creating and storing a linear command regeneration template further comprises:
  - 3 storing a begin option node template in said at least one linear node template.
- 1 3. (previously amended) The method of Claim 1 wherein the step of creating and storing a linear command regeneration template further comprises:
  - 3 storing a next option node template in said at least one linear node template.
- 1 4. (previously amended) The method of Claim 1 wherein the step of creating and storing a linear command regeneration template further comprises:
  - 3 storing an end option node template in said at least one linear node template.
- 1 5. (previously amended) The method of Claim 1 wherein the step of creating and storing a linear command regeneration template further comprises:
  - 3 storing a begin option node template, a next option node template, and an end option node template in said at least one linear node template.

1    6. (previously amended) The method of Claim 1 wherein the step of regenerating said  
2 configuration command further comprises the step of:

3         filtering said linear command regeneration template to locate at least one linear node  
4 template.

1    7. (previously amended) The method of Claim 1 wherein the step of regenerating said  
2 configuration command further comprises the step of:

3         scanning the linear command regeneration template to find a begin option node  
4 template, said begin option node template including an identification.

1    8. (Cancelled)

1    9. (previously amended) The method of Claim 7, wherein the step of regenerating said  
2 configuration command further comprises the steps of:

3         scanning the linear command regeneration template to find an end option node  
4 template that includes said identification of the begin option node template.

1    10. (previously amended) The method of Claim 6 wherein the step of regenerating said  
2 configuration command further comprises the step of:

3         passing said filtered linear node template from the linear command regeneration  
4 template to an evaluate branches process.

1    11. (previously amended) The method of Claim 10 further comprising the step of:  
2         evaluating at least one branch in said filtered linear node template from the linear  
3         command regeneration template by said evaluate branches process.

1    12. (previously amended) The method of Claim 10 further comprising the step of:  
2         finding a branch in said filtered linear node template.

1    13. (previously amended) The method of Claim 12, further comprising the step of:  
2         validating said branch based on data from said configuration database.

1 14. (currently amended) A computer-readable medium carrying one or more sequences  
2 of instructions for automatically re-constructing a network device configuration command  
3 that was used to configure a network device based on data stored in a configuration database,  
4 wherein parsing and processing of the configuration command by the network device  
5 resulted in storage of data in the configuration database, and wherein execution of the  
6 sequences of instructions by one or more processors causes said one or more processors to carry  
7 out the steps of:

8 creating and storing a linear command regeneration template that includes at least one  
9 linear node template in a memory, each linear node template corresponding to  
10 a command element in said configuration command; and  
11 regenerating said configuration command based on said linear command regeneration  
12 template and based ~~one~~ on data from the configuration database.

1 15. (previously amended) The medium of Claim 14 wherein said one or more sequences  
2 of instructions for creating and storing a linear command regeneration template further  
3 comprises one or more sequences of instructions for:  
4 storing a begin option node template in said at least one linear node template.

1 16. (previously amended) The medium of Claim 14 wherein said one or more sequences  
2 of instructions for creating and storing a linear command regeneration template further  
3 comprises one or more sequences of instructions for:  
4 storing a next option node template in said at least one linear node template.

1 17. (previously amended) The medium of Claim 14 wherein said one or more sequences  
2 of instructions for creating and storing a linear command regeneration template further  
3 comprises one or more sequences of instructions for:  
4 storing an end option node template in said at least one linear node template.

1 18. (currently amended) The medium of Claim 14 wherein said one or more sequences  
2 of instructions for creating and storing a linear command regeneration template further  
3 comprises one or more sequences of instructions for:

4           storing a begin option node template, a next option node template, and an end option  
5           node template in said at least one linear node template.

6     19. (previously amended) The medium of Claim 14 wherein said one or more sequences  
7     of instructions for regenerating said configuration command further comprises one or more  
8     sequences of instructions for:

9           filtering said linear command regeneration template to locate at least one linear node  
10          template.

1     20. (previously amended) The medium of Claim 14 wherein said one or more sequences  
2     of instructions for regenerating said configuration command further comprises one or  
3     more sequences of instructions for;

4           scanning the linear command regeneration template to find a begin option node  
5           template, said begin option node template including an identification.

1     21. (cancelled)

1     22. (previously amended) The medium of Claim 20, wherein said one or more sequences  
2     of instructions for regenerating said configuration command further comprises one or  
3     more sequences of instructions for:

4           scanning the linear command regeneration template to find an end option node  
5           template that includes said identification of the begin option node template.

1     23. (previously amended) The medium of Claim 19 wherein the one or more sequences  
2     of instructions for regenerating said configuration command further comprises one or  
3     more sequences of instructions for:

4           passing said filtered linear node template from the linear command regeneration  
5           template to an evaluate branches process.

1     24. (previously amended) The medium of Claim 23 further comprising one or more  
2     sequences of instructions for:

3           evaluating at least one branch in said filtered linear node template from the linear  
4           command regeneration template by said evaluate branches process.

1       25. (previously amended) The medium of Claim 23 further comprising one or more  
2           sequences of instructions for:  
3           finding a branch in said filtered linear node template.

1       26. (currently amended) The medium of Claim 25 further comprising one or more  
2           sequences of instructions for:  
3           validating said branch based ~~one~~ on data from said configuration database.

1       27-39 (cancelled)

1       40. (previously amended) In a network device configured by a configuration command,  
2           an apparatus for automatically re-constructing said configuration command based on data  
3           stored in a configuration database during parsing and processing of the configuration  
4           command by the network device, the apparatus comprising:  
5           means for creating and storing a linear command regeneration template that includes  
6           at least one linear node template in a memory, each linear node template  
7           corresponding to a command element in said configuration command; and  
8           means for regenerating said configuration command based on said linear command  
9           regeneration template and based on data from the configuration database.

1       41. (previously amended) The apparatus of Claim 40 wherein said means for creating  
2           and storing a linear command regeneration template further comprises:  
3           means for storing a begin option node template in said at least one linear node  
4           template.

1       42. (previously amended) The apparatus of Claim 40 wherein said means for creating  
2           and storing a linear command regeneration template further comprises:

3           means for storing a next option node template in said at least one linear node  
4           template.

1   43. (previously amended) The apparatus of Claim 40 wherein said means for creating  
2   and storing a linear command regeneration template further comprises:

3           means for storing an end option node template in said at least one linear node  
4           template.

1   44. (previously amended) The apparatus of Claim 40 wherein said means for creating  
2   and storing a linear command regeneration template further comprises:

3           means for storing a begin option node template, a next option node template, and an  
4           end option node template in said at least one linear node template.

1   45. (previously amended) The apparatus of Claim 40 wherein said means for  
2   regenerating said configuration command further comprises:

3           means for filtering said linear command regeneration template to locate at least one  
4           linear node template.

1   46. (previously amended) The apparatus of Claim 45 wherein said means for filtering  
2   said linear command regeneration template to locate comprises:

3           means for scanning said linear command regeneration template to find a begin option  
4           node template, said begin option node template including an identification.

1   47. (currently amended) A method of automatically re-constructing a network device  
2   configuration command based on configuration data stored in the network device, wherein  
3   parsing and processing of the configuration command resulted in storage of the configuration  
4   data, wherein the command comprises at least one command element that can have a  
5   plurality of values, the method comprising the computer-implemented steps of:

6           creating and storing at least one linear node in a parse tree for representing said at  
7           least one command element, wherein said linear node comprises a begin

8           option node having a single entrance; a next option node coupled to said being  
9           begin option node having a single entrance; and an end option node coupled to  
10          said being begin option node wherein said end option node has a single exit;  
11          creating and storing a linear command regeneration template in a memory, wherein  
12           the linear command regeneration template comprises information identifying  
13           how to regenerate a configuration command; and  
14          regenerating the command based on the linear command regeneration template and  
15           based on data from said configuration data stored in the network device.

1       48. (previously presented) The method of Claim 47, wherein creating and storing at least  
2       one linear node further comprises connecting a plurality of branches to said begin option  
3       node.

1       49. (previously presented) The method of claim 48 wherein each branch in said plurality  
2       of branches represents a different value of said at least one command element.

1       50. (previously presented) The method of claim 48, wherein each branch is associated  
2       with a next option node.

1       51. (previously presented) The method of claim 47, wherein said parse tree further  
2       comprises a binary node.

1       52. (currently amended) The method of claim 47, wherein said command includes  
2       another command element that can have a plurality of values, said method further comprising  
3       representing said another command element by another linear node in said parse tree wherein  
4       said another linear node comprises a second being begin option node having a single entrance  
5       connected to said exit of said end option node, a second next option node coupled to said  
6       another begin option node, and a second end option node coupled to said another begin  
7       option node wherein said another end option node has a single exit.

1       53. (previously presented) A method of automatically regenerating a network device  
2       configuration command based on configuration data stored in the network device, wherein

3    parsing and processing of the configuration command resulted in storage of the configuration  
4    data, the method comprising the computer-implemented steps of:

5                creating and storing a linear command regeneration template including a linear node  
6                template, wherein the linear node template comprises a begin option node  
7                template, a next option node template, and an end option node template;  
8                regenerating the configuration command based on the linear command regeneration  
9                template and based on data from a database, by:

10              scanning the linear command regeneration template to find an end option node  
11              template that includes an identification of the begin option node template;  
12              passing the linear node template from the linear command regeneration template to an  
13              evaluate branches process;  
14              evaluating at least one branch in the linear node template from the linear command  
15              regeneration template by the evaluate branches process;  
16              finding a branch in the linear node template; and  
17              validating the branch using the configuration data stored in the network device.